PATHOLOGICAL.

A Study in Comparative Psychology. By Prof. A. Forel (*L'année Psychologique*, 1896). The researches of comparative psvchology can bear only upon the most primary notions, and even regarding these we must renounce to an actual assimilation of our subjective syntheses with those of animals. If we observe the acts of the various species of animals and compare them to ours we meet with one fundamental fact, viz: the apparent antagonism of instinct on one side, of intelligence on the other. The instinct, although automatic and blind, acts yet with such precision in the complexity of purposes so it be reached, that it counterfeits the sagacity of reason. One might call it an automatized sagacity, a crystallized intelligence. In fact, the instinct and the reason prove that the nerve centres can act in two manners to reach the same end: (a) automatically; (b) in an adaptive, plastic manner, which we call intelligence, because it adapts itself to unforseen circumstances while the instinct is directed by fixed laws and acts only in certain order and upon the incitation of certain sensory stimulations; if the latter are absent the mechanism refuses to act or ceases to act in a co-ordinated manner. These two kinds of nerve activity F. proposes to call the plastic and the automatic respectively. There is no absolute antagonism between automatism and reason; there are forms of nerve activity between the two and one can pass into the other. This becomes evident if we consider the following facts:

1. Man himself is loaded with so-called secondary automatisms, acquired by habit. His acts, first plastic, adaptive in their details and at the same time hesitating, slow, uncertain, become sure, rapid and well co-ordinated by repetition, but they grow at the same time mechanical, fixed, automatic. By admirable syntheses of these two kinds of activity we learn (for instance, in musical performances) to subordinate complex automatisms thus formed, to a superior plasticity which co-ordinates, modulates them, has command over them, and on its own part adapts itself to the brightest harmonies in the momentary inspiration of imagination.

2. Aside from the secondary or habit automatisms there are inherited automatisms, called instincts. Here we can again distinguish two varieties. Some are complete; a simple sensory stimulation can put them into complete action from the moment of the birth of the animal or from the moment when their manifestation appears. The others are incomplete and need more or less schooling for their complete development. The gait, absolutely instinctive in the chicken, is nearly so in the dog, but must be learned by man.

3. Even in the execution of the apparently most complete automatism, even in insects, ' intermezzos " are observed consisting in short and simple "plastic" or adaptive activities.

4. The abandonment, the non-activity of an automatism makes the nerve centre (or germinative plasma) presiding over it come back on the "plasticity" (adaptivity).

5. The complex automatisms which are adapted to a special purpose require an infinitely lesser number of neurons than the plastic faculty of individual adaptation requires for the same complexity of action.

The brain of the ant represents a very small association of small neurons, yet this insect (that is, the Arbeiterameise) has very complex and very great social instincts. But taken individually and out of the domain of its instinct, the ant is a simple insect nearly incapable of the most simple reflexion. It is superior, indeed, to most of the other insects, but with regard to adaptation (plasticity) it is infinitely inferior to the most inferior mammalia, inferior even to the most cold-blooded vertebrates.

Yet even the ants are not devoid of plastic activity; they show many variations and individual plastic adaptions in their otherwise automatized actions.

The interesting facts which F. adduces in support of the view that the ants are also capable of plastic activity must be read in the original, which contains also highly interesting descriptions of the social instincts of these insects.

We may still once more note F's important conclusion that our psychology cannot be transplanted into that of the insects. We must content ourselves with exact biological observations and carefully note the facts of plastic activity and automatic activity in trying to understand and appreciate them as exactly as possible.

ONUF.

On a Little Known Form of Occupation-Neuralgia. By Prof. Bernhardt (*Neurol. Centralblatt*, 1896, No. 1). Under the above title, B. describes a condition characterized by pain in the epicondylus externus humeri, sometimes also of the capitulum radii; this pain is in some cases spontaneous, in others, there is only tenderness to pressure. Usually the right arm is affected in this manner, seldom the left. When the arm is at rest there is usually no pain, or only slight pain. As soon as the arm and especially the hand is used, the pain sets in or is increased and irradiates over the whole dorsum of the forearm down to the hand. It is probably by action of the extensor-muscles of the hand and fingers that the pain is created, and B. says that evidently exertion of the said groups of muscles is the principal etiological factor. Traumatism and refrigeration may also come into consideration.

Whether a slight periostitis is at the bottom of the trouble cannot be decided. Such inflammation could not amount to much, as even in the most marked cases, redness, swelling and elevation of the temperature are entirely absent.